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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/272,303	03/19/1999	SATORU TOMARU	32307-147486	5475

7590

06/20/2002

VENABLE BAETJER HOWARD & CIVILETTI  
1201 NEW YORK AVENUE NW  
SUITE 1000  
WASHINGTON, DC 20005

EXAMINER

ANGEBRANDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 06/20/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/272,303

Applicant(s)

TOMARU ET AL.

Examiner

Martin J Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

1. The response provided by the applicant has been read and given careful consideration. Responses to the arguments offered by the applicant are presented after the first rejection to which they are directed. The examiner allows the language oligomer for the compound of formula (I), but does not allow this language to exclude compounds embraced by the formula, which are termed monomers in the prior art.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 10 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Clearly, the applicant's are enabled for  $n=1$  for the formula, irrespective its being considered a monomer or an oligomer. The applicant does not have a basis for excluding  $n=1$  based upon the language of the specification as originally filed excepting when  $n=5$ .

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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There is no definition for "a" in "am" appearing in the text of line 9 to define the meaning of " $R$  is  $C_m X_{am+1}$ "

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. <sup>9-11</sup> Claims ~~5 and 6~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsukamoto et al. '715, in view of Fan et al. EP 0446672.

Tsukamoto et al. '715 teaches the use in the 11<sup>th</sup> embodiment, the formation of a photosensitive on a substrate followed by imagewise exposure using a mask. The use of epoxy compositions is disclosed, including EHPE-3150 which is embraced by formula I (21/43-61). In the case of the cited figures air or the substrate which each have a lower refractive index than the waveguide materials act in place of cladding layers. Photoinitiators useful with epoxies are disclosed. (23/30-67) The use of cladding materials is disclosed. (16/42-47) The use of solvent development is disclosed. (20/29-52). The use of compositions where EHPE-3150 is used in amounts of 33% is found in table 1 in column 30. The use of 17% EHPE-3150 is found in table 3 in columns 35-36. . The use of 37.4 % EHPE-3150 is found in table 6 in column 44. The use of spin-coating as an alternative to other coating methods, like knife coating is disclosed. (18/3-22). The modification of amounts to vary the viscosity is also disclosed. (17/66-18/2).

Fan et al. EP 0446672 teaches with respect to figures 3a-e, the coating of a cladding layer, the formation of a waveguiding core using a photosensitive polymer in selected areas and the overcoating with an upper cladding layer. (12/10-44) The cladding layer are disclosed as

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having a lower refractive index than the waveguiding core. The use of the photosensitive epoxy epirez su8 for the waveguiding core and the use of epoxy functionalized PMMA for the cladding is disclosed. (12/37-40) As discussed in the first example, the use of spin coating for coating the photosensitive waveguiding core and the use of lithographic patterning for the exposure are disclosed (10/40-47, 10/47-53). The use of solvent development to remove undesired photosensitive material to form the ridge core is disclosed. (11/10-19). The teachings with respect to figure 2 are similar, but do not use the solvent development step.

It would have been obvious to one skilled in the art to modify the process of example 11 of Tsukamoto et al. '715 by using epoxies known to be useful a waveguiding cores, such as EPHE-3150 and to use known concentrations of these, such as 17,33 or 37 % EPHE-3150 based upon direction in the reference and to develop them using solvents to remove the uncured portions of the epoxy waveguiding layer, such as those taught in Fan et al. EP 0446672 and to use cladding layer below and above the waveguiding core as taught by Fan et al. EP 0446672, based upon the disclosure of equivalence within the references between the solvent development and refractive index distribution techniques and the various waveguiding materials and the direction to the use of cladding layers within Tsukamoto et al. '715.

The applicant argues that the amount of monomer/oligomer is not taught. The examiner points to the tables cited above in the Tsukamoto et al. '715 reference which teach 17, 33 and 37 % of the monomer/oligomer EHPE-3150. The registry number of which corresponds to a compounds embraced by formula (I) of the claims. The applicant argues the use of spin coating in the method. The examiner notes that both references are directed to waveguide formation and in the case of Fan et al. EP 0446672, the use of spin coating of photosensitive core is disclosed

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and the use of spin coating in general as a coating technique is disclosed in Tsukamoto et al.

'715. The applicant argues the criticality of the coating to 50 microns, **but this is an unrecited feature**. The examiner points to thicknesses of 23 microns in the example of table 3 (36/20-25), and the use of thicknesses of appropriate to connect optical fibers having diameters of 125 microns with respect to the example corresponding to table 6. ( 43/59-44/36). The Fan et al. EP 0446672 teaches that the waveguides will be on the order of 1 to 50 microns. (11/44-46). The examiner notes that even the limitation that the waveguide be a multimode device is unrecited. The rejection stands.

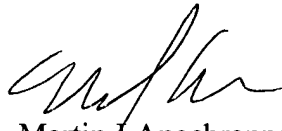
7 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebrannndt whose telephone number is 703-308-4397. The examiner can normally be reached on Mondays-Thursday and alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703-308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Martin J Angebranndt  
Primary Examiner  
Art Unit 1756

June 18, 2002